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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/511,117 | 07/08/2005 | Ionel D. Jitaru | 14609-0033 | 8839 |
| 7590 Thomas D MacBlain Gallagher & Kennedy 2575 East Camelback Road Phoenix, AZ 85016-9225 | | 11/30/2007 | EXAMINER PATEL, RAJNIKANT B | |
| | | | ART UNIT 2838 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/511,117

Applicant(s)

JITARU, IONEL D.

Examiner

Rajnikant B. Patel

Art Unit

2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) The invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Taurand (U.S. Patent # 5,745,351).

Levrán et al. disclose the claimed subject matters a DC-DC converter (figure 10), including a power transformer (figure 10, item 1), first and second winding (figure 10, item Lp and Ls), a first semiconductor switch (figure 10, item Tp), a second semiconductor switch (figure 10, item Ts), a first control circuit (figure 10, item 70), a second control circuit (figure 10, item 80), a current sensor (column 18, line 1-10) and a reverse current column 12, line 30-65 and column 13, line 1-50). In regards to claim 2, (column 19, 35-55), voltage across the switch is zero volts (column 10, line 1-20).

In regards to claims 3-8, It has been held that recitation that an element is "adapted to" perform a function is not a positive limitation but only required to so perform. It does not constitute a limitation in any patentable sense. In re Hutchison, 69 and further applicant used repeatedly the functional recitation "adapted for": the statements following "adapted to" are ambiguous, and IVIPEP 2106 states that "Language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation may raise a question as to the limiting effect of the language in a claim". Further, the courts held that USPTO personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054- 55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997), E-Pass Techs., Inc. v. 3Corn Corp., 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003), In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541,550-551 (CCPA 1969), In re Zletz, 893 F.2d 319,321- 22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989), In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000).

3. Claims 21-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Martin, Jr. (U.S. Patent # 5,109,326).

Martin Jr. disclose the claimed subject matters a DC-DC converter (figure 1), including a power transformer (figure 1, item Wp and Ws), a first and a second semiconductor switch (figure 1, item Tp and Ts), a first and second circuit in current conducting relation (figure 1, item Ip and Is), a first and second control circuit (figure 1, item VpGs and VsGs) and a sensing element and turning ON/OFF semiconductor switch (column 3, line 25-60), the first and second first and second windings, group consist of direction of current, voltage, a time delay, zero voltage, sensing element (figure 1, item P1, S1, and column 5-8, line 1-65).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faulk et al. (U.S. Patent # 5,841,641) in combination with Pietkiewicz et al. (U.S. Patent # 5,539,630)

Faulk disclose the claimed subject matters a DC-DC converter (figure 3A-B), including self-regulation (column 30, line 35-40), a power transformer (figure 3A item 100), primary and secondary winding (figure 3A, item 102 and 104), a primary and a secondary semi-conductor switches (figure 3A-B, item 110 and 116), over-voltage and zero crossing (column 25, line 1-65). However Faulk does not disclose the utilization of the technique for short circuit and over-voltage protection. Pietkiewicz et al. teaches the utilization of the similar technique for the short circuit and over-voltage protection (column 7, line 10-60). It would have been obvious one having an ordinary skill in the art at the time the invention was made to modify Faulk et al.'s converter circuit by utilizing the technique taught by Pietkiewicz et al. for the purpose of protecting circuit components.

6. Claims 28-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin, Jr. (U.S. Patent # 5,109,326) in combination with Nagagata et al. (U.S. Patent # 4,958,268).

Martin, Jr. discloses claimed subject matters as explained in claims 21-27, except the utilization technique for a reverse current through the respective semiconductor switch and predetermine reference voltage. Nagagata et al. teaches the utilization of the similar technique for a reverse current through the respective semiconductor switch (column 7, line 15-65) and predetermined reference voltage (figure 5, item 32). It would have been obvious one having an ordinary skill in the art at the time the invention was

made to modify Martin, Jr.'s converter circuit by utilizing the technique taught by Nagagata et al. for the purpose of increasing efficiency of the converter circuit.

7. Claims 33-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin, Jr. (U.S. Patent # 5,109,326) in combination with Kondo (U.S. Patent # 6,151,233) and Taurand (U.S. Patent # 5, 5745, 351).

Martin, Jr. discloses claimed subject matters as explained in the claims 21-27, above, except the utilization of the technique for a current sensor for detecting the direction of the current flowing through the semiconductor switch, controlling switch accordingly, reverse and zero current flowing through a switch and overload protection. Kondo teaches the Utilization of the similar technique for a current sensor for detecting direction of current through semiconductor switch (figure 1, item 22), and Taurand teaches the utilization of the similar technique for zero current (column 18, line 35-70+) and overload protection (column 6, line 1-10). It would have been obvious one having an ordinary skill in the art at the time the invention was made to modify Martin, Jr.'s converter circuit by utilizing the technique taught by Kondo and Taurand for the purpose of increasing efficiency of the DC-DC converter and protecting circuit components.

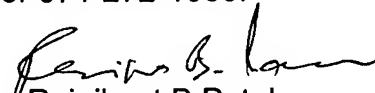
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rajnikant B. Patel whose telephone number is 571-272-2082. The examiner can normally be reached on 6.30-5.00; m-f.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Akm Ullah can be reached on 571-272-2361. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Rajnikant B Patel
Primary Examiner
Art Unit 2838
